28th NDAC Report from Lund Observatory

WP6000: Step 2/3 (Lindegren)
During this period the HP9000/530 computer at Lund Observatory has been replaced with an HP9000/835 and the disc space available to users has been significantly increased. The full-scale simulation of Step 2/3 (using 114,488 stars observed for 2.5 years), which was first performed in June–July 1988 (LO/120), has now been repeated on the new system. The results are entirely satisfactory and the gain in computing speed, including input/output operations, is typically a factor four.

Modifications and extensions of the Step 2/3 programs are now in progress. In particular the preparation and sorting modules (PREP23 and SORT23) are being adapted to the most recent interface specifications and input catalogue format (IC3).

WP8000: Double Stars (Söderhjelm)
Two main programs for the derivation of Case History Files have been written and tested (LO/121). In the first one, saved $\beta$-data are calibrated by using the final attitude data, producing ‘observations’ in star-wise order for a set at a time. In the second program, the data from the whole mission are collected together in essentially a variant of the SORT23 program, producing a sequential collection of CHF:s. Still lacking are a series of administrative programs handling all the required input data and calibrations (3–4000 Mb).

Because previous assumptions about the a priori accuracy of the relative positions in known doubles will probably not be fulfilled, a more complex variant (STDDBL) of the STDDBL program has been devised (LO/122). Both the primary and the secondary positions may now be in error by 1–3 arcsec with a high probability of the program finding the correct solution. The computing effort is an order of magnitude larger than before, but the task is still manageable thanks to a new computer at the Observatory.

Miscellaneous (Lindegren)
Following the re-definition of the time scale for the Nominal Scanning Law in terms of the on-board clock (rather than Universal Time), it will be necessary to supply the relation between on-board time and astronomical time along with the heliotropic attitude angles, e.g. in the RGO/CUO/LO and NDAC/TDAC interfaces. A proposal on this subject has been circulated (LO/119).

A second revision of data and programs for calculating the geocentric ephemerides of minor planets, Europa and Titan has been sent on magnetic tapes to RGO and CUO. (The first revision, from January 1989, was never officially distributed because an error was discovered in the positions of the major planets.) The data cover at least the interval 1989.25 to 1992.00.

Working papers

C = NDAC/LO/119 (Lindegren, 1989 March 8):
Re-definition of the NSL time scale: Implications for the NDAC interfaces
C = NDAC/LO/120 (Lindegren, 1989 March 16):
Results of the first full-scale simulation of the Sphere Solution etc
C = NDAC/LO/121 (Söderhjelm, 1989 March 31):
HIPPARCOS reductions for multiple stars, IX
C = NDAC/LO/122 (Söderhjelm, 1989 May 19):
HIPPARCOS reductions for multiple stars, X